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[54]	SIMPLIFIED STRAPPED DOWN INERTIAL NAVIGATION UTILIZING BANG-BANG GYRO TORQUING			
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[*]	Notice:	The portion of the term of this patent subsequent to Dec. 9, 1992, has been disclaimed.		
[21]	Appl. No.:	624,343		
[22]	Filed:	Oct. 21, 1975		
[51] [52]	Int. Cl. <sup>2</sup>			
[58]	Field of Search			
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## [57] ABSTRACT

A self-contained, strapped down guidance system combining all axes, all attitude navigation having two wide angle, two-degree-of-freedom gyros which provide attitude angle and angular rate signals along three axes. Accelerometer means provide signals representative of the acceleration along three orthogonally displaced independent axes. A first transformation matrix connected to the attitude angle output of the gyros and to the accelerometers transforms the gyro and accelerometer signals from body coordinates to gyro coordinates. A second transformation matrix connected to the output of the gyros, transforms the gyro coordinates into navigation coordinates. In order to perform navigational computations, computing means compute a transformation from gyro momentum vector (referenced to coordinate frame) to a navigational coordinate frame such as a locally vertical frame wherein the Z axis is always along the local vertical direction.

## 8 Claims, 5 Drawing Figures

